Sequencing of Data From Multiple Channels Through a Shared Decoder," filed on even date herewith as U.S. Serial No. 09/240,171, which applications are incorporated herein by reference in their entirety.

Please substitute the following for the paragraph beginning on page 3, line 8:

In each of the sub-band FDM modes discussed above, transmission may occur in one of two error correction modes which are, heavy or light. In both the heavy and light cases, an outer code is used for data encoding which is typically a Reed-Solomon code over GF (256) of size (236, 212). In the heavy case, an inner code is also used. This inner code is typically a short rate one-half block code as, for example, the (8,4) biorthogonal code.

Please substitute the following for the paragraph beginning on page 5, line 23:

The phase lock loop provided by the phase tracking and preamble processing functions 20 and 22 operates in one of two modes relative to a decision direction depending upon whether the decoder and demodulator 10 is operating in the ZL or ZH modes. For light code bursts, the phase lock loop processes the {p(n)}, {q(n)} sample pairs for each symbol independently and forms an error estimate for the phase lock loop filter. In a typical case in the light mode, the phase lock loop is a first order phase lock loop which simply accumulates $k^*\varepsilon_n$ to yield the phase estimate θ wherein ε_n is the phase error estimate for each sample pair. Since synchronization for advanced satellites maintains the uplink frequency within a very tight tolerance which is typically no worse than ±500 Hz or equivalently, 0.001 revolution per symbol epoch for the slowest transmission data rate of typically 500 kilosymbols per second for the Z mode, a simple first order loop with a gain k in the range of 1/16 is adequate to track the phase.

The demodulator and decoder may optionally use a lower loop gain when processing bursts from modes Y and X which have a higher symbol rate.

Please substitute the following for the paragraph beginning on page 8, line 11:

A multichannel data demultiplexing and reordering memory processes the output data from multiple channels outputted from the phase tracking function. Time division multiplexed (TDM) processing of multiple channels eliminates parallel processing paths for each of the channels as in the prior art which required a soft and a hard decision processing path for each of the channels.

Please substitute the following for the paragraph beginning on page 9, line 24:

A method of data reception in accordance with the invention includes receiving and storing a time division multiplexed signal containing a sequence of data samples from a plurality of channels; outputting the stored data samples in a sequence of data groups, each data group containing a plurality of samples from one of the plurality of channels; decoding the data samples within each data group; and outputting the decoded data samples of the plurality of data groups. The data samples may each comprise orthogonally encoded data; and the decoder may be an inner code soft decision biorthogonal decoder. The orthogonally encoded data samples may be QPSK encoded. The data in a preferred application is received by a satellite. An input bandwidth is received and is divided with a channelizer into a plurality of output channels each of equal bandwidth, one of the output channels comprising the time division multiplexed access signal. The data samples are stored in a memory comprising a write address generator and a record address generator and an addressable storage array containing memory cells which are addressed by addresses

generated by the write address generator and the read address generator, the sequence of data samples being written in a group of memory cells by addresses generated by the write address generator and the sequence of data groups are each individually read out from a group of memory cells by addresses generated by the read address generator.

Please substitute the following for the paragraph beginning on page 12, line 20:

Fig. 3 illustrates the operation of the multiple channel data demultiplexing and reordering memory 114 which may be a RAM. The data is in accordance with a key of $Y_m(n)$ wherein m is the channel number and n is the time index. Therefore, it is seen, for example, that the sample Y1(1) is a data sample from channel number one at time index one. As illustrated, the "INCOMING DATA" 202 is TDM samples 204 from channels Y1, Y2, Y3, Y4 and Y5. Each sample 204 is representative of two-bit symbols which are encoded by QPSK encoding and each are stored in a pair of memory cells. The data structure after storing the sequence of individual lines 202 of "INCOMING DATA" is in the block 206 located to the right of the legend "WRITE INTO RAM". The block 206 is comprised of four rows 208 of data samples which are identical to the incoming data 202 and are sequentially read in columns from successive stored lines 202 of the block 206 of the stored TDM input data.

IN THE DRAWINGS:

Applicant has amended Figures 3 and 4 to correct a typographical error ('PARALLELIZE" should have been "PARALLELIZED") as marked on the attached sheet (circled for your convenience). It is respectfully requested that Examiner approve these drawing changes.